

Serial No. 09/091,605  
Amendment dated September 22, 2003  
Reply to Office action of April 21, 2003

### Claim Amendments

In accordance with revised 37 C.F.R. 1.121, a listing of all claims that are, or were, in the application is provided below. Claims 35-60 are pending after amendment by this paper. Please amend Claims 36 and 59 as indicated in the listing that follows:

Claims 1-34. Cancelled

35. (Previously added) A stable cell line of mammalian origin transformed with a vector comprising a DNA sequence encoding a protein of the formula:

His-Xaa<sup>1</sup>-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-  
Tyr-Leu-Xaa<sup>2</sup>-Gly-Gln-Ala-Ala-Xaa<sup>3</sup>-Xaa<sup>4</sup>-Phe-Ile-Ala-Trp-Leu-Val-Lys-  
Gly-Arg-Xaa<sup>5</sup>

wherein

Xaa<sup>1</sup> is Ala, Gly, Val, Thr, or Ile;

Xaa<sup>2</sup> is Glu, Gln, Ala, Thr, Ser, or Gly;

Xaa<sup>3</sup> is Lys, or Arg;

Xaa<sup>4</sup> is Glu, Gln, Ala, Thr, Ser, or Gly; and,

Xaa<sup>5</sup> is Gly-OH or is absent, and

wherein the cells are immunologically masked.

36. (Currently amended) The cell line of Claim 35 wherein the cells are immunologically masked with a method selected from a group consisting of the following:

a) coating the cells with F(ab')<sub>2</sub> fragments specific for HLA class I antigens,

~~or~~ and

b) encapsulating the cells in semi-permeable membranes.

37. (Previously added) The cell line of Claim 35 wherein Xaa<sup>1</sup> is Ala or Val; Xaa<sup>2</sup> is Glu; Xaa<sup>3</sup> is Lys or Arg; Xaa<sup>4</sup> is Glu; and Xaa<sup>5</sup> is Gly-OH or is absent.

38. (Previously added) The cell line of Claim 37 wherein Xaa<sup>1</sup> is Ala, Xaa<sup>3</sup> is Lys; and Xaa<sup>5</sup> is Gly-OH.

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39. (Previously added) The cell line of Claim 37 wherein Xaa<sup>1</sup> is Val; Xaa<sup>3</sup> is Lys; and Xaa<sup>5</sup> is Gly-OH.
40. (Previously added) The cell line of Claim 35 wherein the vector further comprises a viral promoter controlling expression of said DNA sequence.
41. (Previously added) The cell line of Claim 35 wherein the vector further comprises a metallothionein promoter controlling expression of said DNA sequence.
42. (Previously added) The cell line of Claim 35 wherein the DNA sequence is:  
5' - CAT GCT GAA GGG ACC TTT ACC AGT GAT GTA AGT TCT TAT  
TTG GAA GGC CAA GCT GCC AAG GAA TTC ATT GCT TGG CTG  
GTG AAA GGC CGA GGA - 3'.
43. (Previously added) The cell line of Claim 35 wherein the DNA sequence is:  
5' CAT GTT GAA GGG ACC TTT ACC AGT GAT GTA AGT TCT TAT  
TTG GAA GGC CAA GCT GCC AAG GAA TTC ATT GCT TGG CTG  
GTG AAA GGC CGA GGA - 3'.
44. (Previously added) The cell line of Claim 35 which is an immortalized cell line.
45. (Previously added) The cell line of Claim 44 which is of human embryonal kidney cell origin.
46. (Previously added) The cell line of Claim 35 which is transformed with a vector selected from the group consisting of:  
a) pGT-h+tLB+GLP-1;  
b) pGT-h+tLB+Val8GLP-1; and  
c) pMT-h+tLB+Val8GLP-1.
47. (Previously added) The cell line of Claim 46 wherein the vector is pGT-h+tLP+GLP-1.

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48. (Previously added) The cell line of Claim 46 wherein the vector is pGT-h+tLB+Val8GLP-1.
49. (Previously added) A method of producing an immunologically masked, transformed, stable cell line of mammalian origin which expresses a protein of the formula:  
His-Xaa<sup>1</sup>-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-  
Tyr-Leu-Xaa<sup>2</sup>-Gly-Gln-Ala-Ala-Xaa<sup>3</sup>-Xaa<sup>4</sup>-Phe-Ile-Ala-Trp-Leu-Val-Lys-  
Gly-Arg-Xaa<sup>5</sup>  
wherein  
Xaa<sup>1</sup> is Ala, Gly, Val, Thr, or Ile;  
Xaa<sup>2</sup> is Glu, Gln, Ala, Thr, Ser, or Gly;  
Xaa<sup>3</sup> is Lys, or Arg;  
Xaa<sup>4</sup> is Glu, Gln, Ala, Thr, Ser, or Gly; and,  
Xaa<sup>5</sup> is Gly-OH or is absent  
comprising the steps of:  
a) providing a population of cells from a mammalian cell line;  
b) transfecting the cells of (a) with a vector comprising a DNA sequence encoding a protein of the formula:  
His-Xaa<sup>1</sup>-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-  
Tyr-Leu-Xaa<sup>2</sup>-Gly-Gln-Ala-Ala-Xaa<sup>3</sup>-Xaa<sup>4</sup>-Phe-Ile-Ala-  
Trp-Leu-Val-Lys-Gly-Arg-Xaa<sup>5</sup>  
wherein  
Xaa<sup>1</sup> is Ala, Gly, Val, Thr, or Ile;  
Xaa<sup>2</sup> is Glu, Gln, Ala, Thr, Ser, or Gly;  
Xaa<sup>3</sup> is Lys, or Arg;  
Xaa<sup>4</sup> is Glu, Gln, Ala, Thr, Ser, or Gly; and,  
Xaa<sup>5</sup> is Gly-OH or is absent,  
c) culturing the transfected cells of (b), under conditions that selectively propagate cells which express the protein of (b), and  
d) immunologically masking the cells of (c).
50. (Previously added) The method of Claim 49 wherein the cells are immunologically masked using a method selected from the group consisting of the following:  
a) coating the cells with F(ab')<sub>2</sub> fragments specific for HLA class I antigens; or  
b) encapsulating the cells in a semi-permeable membrane.

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51. (Previously added) The method of Claim 49 wherein Xaa<sup>1</sup> is Ala or Val; Xaa<sup>2</sup> is Glu; Xaa<sup>3</sup> is Lys or Arg; Xaa<sup>4</sup> is Glu; and Xaa<sup>5</sup> is Gly-OH or is absent.
52. (Previously added) The method of Claim 49 wherein Xaa<sup>1</sup> is Ala, Xaa<sup>3</sup> is Lys; and Xaa<sup>5</sup> is Gly-OH.
53. (Previously added) The method of Claim 49 wherein Xaa<sup>1</sup> is Val; Xaa<sup>3</sup> is Lys; and Xaa<sup>5</sup> is Gly-OH.
54. (Previously added) The method of Claim 49 wherein the vector further comprises a viral promoter controlling expression of said DNA sequence.
55. (Previously added) The method of Claim 49 wherein the vector further comprises a metallothionein promoter controlling expression of said DNA sequence.
56. (Previously added) The method of Claim 49 wherein the vector is selected from the group consisting of:
  - a) pGT-h+tLB+GLP-1;
  - b) pGT-h+tLB+Val8GLP-1; and
  - c) pMT-h+tLB+Val8GLP-1.
57. (Previously added) The method of Claim 56 wherein the vector is pGT-h+tLP+GLP-1.
58. (Previously added) The method of Claim 56 wherein the vector is pGT-h+tLB+Val8GLP-1.
59. (Currently amended) A method of inducing insulin expression in a mammal in need thereof comprising:
  - a) preparing an expression vector capable of expressing a protein with the sequence of SEQ ID NO: 1,
  - b) introducing the expression vector into the mammal whereby the expression vector, when ~~incorporated into a cell~~ integrated into the chromosomal DNA of the target cell, produces a protein of SEQ ID NO: 1.

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60. (Previously added) A method of inducing insulin expression in a mammal in need thereof comprising,
- a) preparing, using the method of Claim 49, an immunologically masked transformed stable cell line that expresses a protein with the sequence shown in SEQ ID NO: 1
  - b) introducing cells of the stable cell line of (a) into the mammal whereby the protein with the sequence shown in SEQ ID NO: 1 is expressed in the introduced cells in the mammal.